WORKING PAPER

REVISITING DEBT-LED AND EXPORT-LED GROWTH MODELS: A SECTORAL BALANCES APPROACH

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ABSTRACT

In this paper, we revisit the macroeconomic foundations and political economy of national growth models. We challenge the Kaleckian framework underpinning the emergent growth model literature in comparative political economy, which focuses primarily on the functional income distribution (wages versus profits), while ignoring personal income distribution (inequality across private households). Using the examples of the "export-led" and "debt-led" growth models of Germany and the United States, we show how institutional differences can help explain why different countries developed different patterns of income distribution and how income distribution and institutions interacted to generate financial imbalances in different sectors of the economy (i.e., the private household sector, the private corporate sector, and the government sector).

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Revisiting debt-led and export-led growth models: a sectoral balances approach[*]

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Abstract

In this paper, we revisit the macroeconomic foundations and political economy of national growth models. We challenge the Kaleckian framework underpinning the emergent growth model literature in comparative political economy, which focuses primarily on the functional income distribution (wages versus profits), while ignoring personal income distribution (inequality across private households). Using the examples of the "export-led" and "debt-led" growth models of Germany and the United States, we show how institutional differences can help explain why different countries developed different patterns of income distribution and how income distribution and institutions interacted to generate financial imbalances in different sectors of the economy (i.e., the private household sector, the private corporate sector, and the government sector).

Keywords: Growth models, financial balances, functional income distribution, personal income distribution, institutions

JEL Classifications: D3, J5, P5

1 Introduction

In this article, we revisit the macroeconomic and political economy foundations of national growth models. We contrast the "export-led" growth model of Germany, traditionally referred to as the classic example of a "coordinated market economy" (CME), with the "debt-led" growth model of the United States, the archetypical "liberal market economy" (LME). The article thus contributes to recent debates about the relationship between macroeconomic growth models and varieties of capitalism (Baccaro and Pontusson, 2016; Hope and Soskice, 2016; Behringer and van Treeck, 2017).

We focus in particular on trends in income distribution and the importance of different sectors of the economy (households, corporations, government) to the emergence of national growth models, which were linked to the widening of current account imbalances during the period running up to the global financial crisis starting in 2008. Although income distribution has played a central role in recent debates about growth models (Baccaro and Pontusson, 2016; Behringer and van Treeck, 2017), most existing analyses fail to clearly address the following questions: firstly, why have different countries displayed such different patterns of income distribution, with some countries (like Germany) experiencing only small changes in top-end income inequality but a dramatic fall in the share of wages in national income, and others (like the United States) featuring an explosion of top household income shares but relatively little variation in the wage share (Figure 1)? And secondly, how are these trends in income distribution related to the emergence of current account surpluses and deficits, which have been driven primarily by the corporate sector in Germany, and by the private household sector in the United States (Figure 2)? We offer answers to these questions by bringing together elements of Neo-Kaleckian macroeconomics (which underpin the growth model perspective proposed by Baccaro and Pontusson, 2016) and of the varieties of capitalism (VoC) literature, while also highlighting the limitations of both approaches in terms of their macroeconomic analysis of the distribution and growth nexus. The starting point of our sectoral balances approach is the accounting identity that the current account balance is equal to the sum of the financial balances of the private household, the corporate, and the government sectors of the economy. We then ask through which institutional channels have the different sectors of the economy contributed to the emergence of national growth models and the related macroeconomic imbalances, in a context of rising economic inequality?

A number of influential recent contributions to comparative political economy have challenged the view that capitalism can be analyzed in terms of neatly identifiable and stable "varieties". Instead, it has been argued that "the time has come to think, again, about the commonalities of capitalism" (Streeck, 2009, p.1). In particular, Streeck (2009) challenges the view that Germany's

political economy still represents a coordinated market economy, by arguing that recent sectoral changes in Germany's political economy were "all toward disorganization": collective bargaining coverage and union density have declined; social policy has been retrenched; the once organized German company network, based on cross-shareholdings, relational banking and government support, has largely disintegrated; German banks increasingly shifted from providers of patient finance for national firms to international players on the international financial markets. However, Streeck (2009) does not analyze the macroeconomic implications of Germany's "re-forming capitalism". In particular, he does not ask in how far the emergence and persistence of Germany's export-oriented growth model is linked to what he describes as the liberalization of its political economy.

In another influential recent contribution, Baccaro and Howell (2017, pp.3-4) argue that "a careful examination of contemporary capitalist political economies reveals a common liberalizing tendency in the trajectory of industrial relations institutions, as everywhere employer discretion has expanded and the balance of class power has shifted against labor." Baccaro and Benassi (2017) consider the macroeconomic consequences of the liberalization of German industrial relations, while borrowing from post-Keynesian macroeconomics (in its Neo-Kaleckian variety) and focusing specifically on the role of income distribution. In particular, they argue that the German economy has shifted from a model of growth simultaneously led by net exports and household consumption, to an almost exclusively export-led model and that this process was to a large extent caused by, or at least facilitated by, the liberalization of the German labor market: first, export-oriented firms have reduced wage costs in order to improve their international export competitiveness by withdrawing from sectoral collective bargaining, and by using opening clauses and outsourcing. Second, the weakening of collective bargaining institutions has led to stagnating wage growth both overall and specifically in the lower half of the wage distribution. According to Baccaro and Benassi (2017), the resulting rise of income inequality has dampened household consumption and thus contributed to the one-sided dependence on net exports of the German economy. Baccaro and Pontusson (2016) and Baccaro and Benassi (2017) also highlight the unstable and destabilizing nature of Germany's export surplus model.

We agree with Streeck (2009) and Baccaro and Howell (2017) that Germany's political economy has undergone significant changes, including substantial shifts in income distribution, throughout the past two decades or so. However, from a comparative perspective, an important open question arises: If the advanced high-income countries, including Germany and the United States, share so many commonalities of capitalism, and if they are characterized by institutional convergence along a neoliberal trajectory, then why have they developed such different growth models? Baccaro and Howell (2017) emphasize that their argument about neoliberal convergence is

compatible with the emergence of different accumulation regimes across countries. While it is, therefore, true that they should not "be accused of treating liberalization as the 'night in which all cows are black'" (Baccaro and Howell, 2017, pp.211-212), the question remains why do different cows look so differently (e.g. export-led growth in Germany versus debt-led growth in the United States) if they are all fed in the same way (liberalization and rising inequality)?

We argue in this article that there are still large cross-country differences in some of the domains typically associated with different varieties of capitalism, including industrial relations institutions, financial arrangements, gender relations, employment mobility, corporate governance, and social policy regimes. In our view, these institutional differences can contribute to explaining firstly, why different countries have experienced drastically different patterns of income distribution (despite very similar trends in summary indicators such as the Gini coefficient of household income or the D9/D1 earnings ratio, see Figure 1), and secondly how changes in income distribution contributed to the emergence of different growth models. It is especially instructive in this regard to compare the export-led and debt-led growth models of, respectively, Germany and the United States.

We argue, in particular, that the strong rise in top-end personal income inequality in the United States has contributed to the fall of the personal saving rate (and to the rise in personal debt) during the decades before the global financial crisis. This argument is supported by empirical evidence and is broadly consistent with theories of consumption grounded in the notion of upward-looking status comparisons, in the tradition of the relative income hypothesis (Duesenberry, 1949; Frank, 2005). These theories of "expenditure cascades" (Frank et al., 2014), "or trickle-down consumption" (Bertrand and Morse, 2016), can explain why the middle and upper-middle classes in the United States have reacted to their falling relative incomes by reducing their financial savings in an attempt at keeping up with households above them in the income distribution ladder, who have increased their expenditures on positional goods in line with their strongly rising incomes. Such consumption externalities can be expected to be especially pronounced in LMEs, where such important positional goods as housing or education are allocated via competitive markets (Hall and Gingerich, 2009), where the precautionary saving motive of households is relatively low due to fluid labor markets with relatively short job tenures and workers with general (rather than industry-specific) skills (Hall and Gingerich, 2009; Carlin and Soskice, 2009), and where, prior to the financial crisis, largely deregulated credit markets have allowed households to maintain their consumption despite falling incomes (van Treeck, 2014). An important driver of the rise in top household income shares in the United States were the pronounced shareholder value orientation and the explosion of top management salaries in the context of a strong stock market orientation of the corporate sector.

In Germany (and other CMEs), by contrast, relative income effects on consumption owing to upward-looking status comparison were less pronounced because top household incomes increased far less, families who depend more strongly on the male breadwinner (with specific skills) have a higher demand for precautionary saving, credit markets are more regulated, and important positional goods are provided through government funding. Meanwhile, the German corporate sector, which is characterized by a large share of family-owned businesses (the Mittelstand), has payed lower dividends and top management salaries to the household sector than its counterpart in the United States. While this is an important reason for the lower top-end personal inequality and weaker trickle-down consumption effects in Germany, the surge in corporate profits led to higher corporate saving and thus constrained the increase in household incomes and consumption demand.

In short, we hope that this article can help bring together the VoC approach to comparative political economy (CPE), Neo-Kaleckian macroeconomics, and the emergent growth model perspective. In our view, one of the blind spots of the VoC approach is the interaction of income distribution and aggregate demand. Neo-Kaleckian macroeconomics, on the other hand, places income distribution center stage in its theory of aggregate demand, but fails to distinguish the effects of changes in functional income distribution (wage income versus profit income) and personal income inequality. It also lacks a political economy explanation of why different countries display different patterns of income distribution and how income distribution and institutions combine to produce different growth models. The emergent growth model approach to CPE has the potential of bringing these traditions together and of developing an interdisciplinary analytical framework for the analysis of distribution and growth from a comparative international perspective. In order to live up to this challenge, we argue, the growth model perspective should recognize the limitations of the Neo-Kaleckian model and adopt a more flexible macroeconomic framework for the analysis of distribution and growth.

The remainder of this article is organized as follows. The next Section offers a critical appraisal of the Neo-Kaleckian distribution and growth model. Section 3 sketches a more flexible macroeconomic perspective which highlights the importance of income distribution for understanding trends in sectoral financial balances and national current account balances. In Section 4, we show how income distribution and institutions have affected the financial decisions of the household, corporate, and government sectors in Germany, to produce a growth model that has been strongly dependent on persistent export surpluses. We contrast the German growth model with the debt-led growth model of the United States, which has featured persistent current account deficits. Section 5 offers some concluding remarks.

2 The limitations of the Neo-Kaleckian model of distribution and growth

The analysis by Baccaro and Pontusson (2016) and Baccaro and Benassi (2017) of national growth models in general, and of Germany's export-led growth model in particular, is strongly inspired by Neo-Kaleckian macroeconomics. As accurately summarized by Baccaro and Benassi (2017), Neo-Kaleckian macroeconomists, following the seminal article by Bhaduri and Marglin (1990), generally distinguish between two types of growth models: "wage-led" and "profit-led", depending on the effect of a change in the share of wages in national income on aggregate demand, *i.e.*, the sum of consumption, investment, and net exports. It is argued that a rise in the wage share has a positive effect on private consumption, *ceteris paribus*, because the propensity to consume out of wages is higher than the propensity to consume out of profits. However, a higher wage share is expected to reduce private investment, *ceteris paribus*, by deteriorating firms' profitability expectations and their ability to self-finance investment expenditures. Similarly, it is expected that net exports will be negatively affected by a rise in the wage share, *ceteris paribus*, owing to a decrease in price competitiveness. In a wage-led growth regime, a rise in the wage share has overall positive effects on aggregate demand, owing to a strong partial effect of a higher wage share on private consumption and relatively weak partial effects on investment and net exports. By contrast, in a profit-led regime, a rise in the wage share has a negative total effect on aggregate demand. This can be the case if either investment spending is highly sensitive to firms' profit margins, or net exports react strongly negatively to a higher wage share via the price competitiveness channel, or both (see Appendix B1 for a technical summary of the Neo-Kaleckian model).

According to a common interpretation (Lavoie and Stockhammer, 2013; Baccaro and Pontusson, 2016), aggregate demand in most industrialized countries was driven by rising wages during the "Golden Age of Capitalism", *i.e.*, during the three decades or so following the Second World War. However, the Fordist model of wage-led growth ground to a halt as wage growth decoupled from productivity growth in the 1970s and 1980s. Since then, different countries developed new growth models that illustrate "different solutions to the problem of finding a replacement for the faltering 'wage driver'" (Baccaro and Pontusson, 2016, p.176). Whereas the United States and the United Kingdom were characterized by "debt-led" growth, in which consumption by working-class families with stagnating real wages was increasingly financed through higher indebtedness (Stockhammer, 2015), Germany "came to rely on export-led growth, repressing wages and consumption to boost the competitiveness of the export sector" (Baccaro and Pontusson, 2016, p.176).

We see several problems with interpreting the historical emergence of debt-led and export-led growth within the Neo-Kaleckian framework as sketched above. Firstly, the model leaves no

role for the personal distribution of income, *i.e.*, the inequality of household income, but focuses exclusively on the functional distribution of income., i.e., the distribution of national income between wages and profits. In the original article by Bhaduri and Marglin (1990), all profit income is retained by the corporate sector, and there is a unique propensity to consume out of household income, with no role for the distribution of wages or other components of personal income across households. When Baccaro and Pontusson (2016, p.182) claim that an increase in the wage share should lead to higher consumption only under the assumption "that the propensity to consume varies negatively with income, such that rich individuals (or households) consume less and save more than poor individuals", this interpretation diverges from the initial formulation of the Neo-Kaleckian model. Bhaduri and Marglin (1990, p.377) make it clear that in their model, if interpreted in the framework of corporate capitalism where households receive income from wages and distributed profits, "all distributed profit and wages would be assumed to be consumed by households". That is, in the Neo-Kaleckian model the positive effect of a higher wage share on consumption stems from the notion that corporate retained profits by definition are saved rather than consumed and that the owners of corporations (shareholders, owner-managers), in their capacity as households, are not affected in their consumption decisions by the value of their corporate holdings. We will return to this important point below, when discussing the rise in corporate net lending as a reflection of the fall in the wage share and the rise of the current account in Germany since the early 2000s (see Figures 1 and 2).

The above quote from Baccaro and Pontusson (2016, p.182) is problematic for another reason: the finding that rich households have a lower propensity to consume than poor households is not sufficient to conclude that a rise in income inequality leads to lower aggregate consumption.[1] Rather, according to different variants of the relative income hypothesis in the tradition of Duesenberry (1949), an increase in income inequality may increase aggregate consumption demand under specific institutional and historical circumstances, if consumption externalities due to upward-looking status comparisons are large and lead to falling saving rates in the lower segments of the income distribution (see Appendix B2 for a technical summary of a variant of the relative income hypothesis).[2] We will discuss the empirical relevance of these theories of "trickle-

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[1]Stockhammer (2015, p.943) makes the same claim, which we believe cannot be expected to generally hold empirically: "The effects of changes in personal income distribution on consumption demand are more straightforward, as standard consumption theory predicts that the poor will have a higher marginal consumption propensity than the rich." He uses this assumption to argue "that rising inequality has, other things equal, a negative effect on consumption expenditures and thus on aggregate demand."

[2]Consider the following simple hypothetical example: there are only two households: household 1 is rich and has an initial income of 60 and a constant propensity to consume of 0.4, household 2 is poor and has an initial income of 40 and a propensity to consume of 0.6. This implies that each household's consumption is 24, and that the aggregate propensity to consume is 0.48. Now, household 1's income increases to 70. With a constant saving rate, its consumption increases to 28. If household 2 is concerned about relative consumption and wants to keep up with the new consumption

down consumption", or "expenditure cascades" below, as an important explanation of the fall in household net lending and the decrease of the current account in the United States since the early 1980s (see Figures 1 and 2). At this stage of the argument, it suffices to emphasize that the Neo-Kaleckian model, while focusing on the distribution between corporate and household income and its implications for aggregate demand, in our view leaves completely open the relationship between personal income inequality and household consumption. There are, therefore, no *a priori* reasons for the view that "shifts within the distribution of wage income, for example, redistribution from super-managers to low-wage workers, would have similar effects to a redistribution from profits to wages" (Baccaro and Howell, 2017, p.6).

Related to the above, the Neo-Kaleckian model does not seem to offer a convincing explanation of why different growth models, as "solutions to the problem of finding a replacement for the faltering 'wage driver'" (Baccaro and Pontusson, 2016, p.176), developed in the different institutional environments of individual countries. On the one hand, this is due to the fact that the only distributional variable in the Neo-Kaleckian model is the wage share. However, the wage share was roughly constant in the United States during the period 1980-2000, for example (Figure 1). Given this observation, is it really meaningful, then, within the Neo-Kaleckian framework to ask whether the U.S. economy has been wage-led, or profit-led, or how the "faltering wage driver" has been replaced by other demand engines? On the other hand, because the Neo-Kaleckian model takes the (functional) income distribution as an exogenous variable, it is of very limited help in understanding why the decline in the wage share been so much stronger (and the rise in top household income shares so much weaker) in Germany than in the United States since the 1980s. Also, because the Neo-Kaleckian model has no theory of household consumption, it cannot establish any link between changes in personal inequality and household consumption and saving and hence cannot account for the divergent trends in the household financial balance in Germany and the United States since the 1980s.

As an overall conclusion, it seems warranted to reconsider the potential complementarity between macroeconomic analyses of distribution and growth, including the Neo-Kaleckian model but also theories of household consumption, and comparative political economy approaches, including the VoC approach and the newly emergent growth model perspective.

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norm set by household 1, it may want to keep its relative consumption constant and increase its propensity to consume to 0.7 so as to achieve an absolute level of consumption of 28. The average propensity to consume then is 0.56.

3 A sectoral balances approach to the political economy of growth models

In this Section, we briefly describe our general approach to the analysis of growth models, before applying it to the German and U.S. growth models in the next Section. While we see the Neo-Kaleckian model, with its emphasis on the functional distribution of income, as an important ingredient of the "growth model perspective", we see the financial balances approach as a useful complementary building block. To see more clearly how the two approaches are linked, it may be useful to consider the macroeconomic accounting identities underlying them more explicitly. The Neo-Kaleckian models focuses on the expenditure equation (GDP = gross domestic product):

$$GDP = Household\ Demand\ + Corporate\ Demand + Government\ Demand + Net\ Exports, \tag{1}$$

where household and government demand consist of consumption and investment spending and corporate demand is corporate investment. The financial balances approach combines the expenditure equation with the income equation (GNI = gross national income):

$$GNI = Household\ Income + Corporate\ Income + Government\ Income. \tag{2}$$

The financial balances equation results from equating the expenditure and the income equation, while making the necessary adjustment for the difference between the gross national income and the gross national product:

$$Current\ Account = Household\ Balance + Corporate\ Balance + Government\ Balance, \tag{3}$$

where the financial balances are defined as the difference between the income and expenditure of each sector.

One advantage of the financial balances approach is that it directly addresses the question of current account imbalances, which are a widely agreed upon indicator of macroeconomic instability. While in the Kaleckian model the total aggregate demand effects of a fall in the wage share can be compatible with either an increase or a decrease in net exports or the current account balance in both a wage-led and a profit-led economy (see Appendix B1), the sectoral balances approach asks

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how have the different sectors of the economy contributed to the observed changes in the current account balance? Clearly, if the current account increases, perhaps as a result of a lower wage share, then there must be a corresponding increase in the financial balance(s) of the corporate sector, the household sector, and/or the government sector. In particular, the financial balances approach seeks to understand how the institutional settings in different countries impacts the net lending positions of different sectors of the economy and how these are related to national growth models.

It may also be useful to recall that both the Neo-Kaleckian approach and the sectoral financial balances approach differ from the individualist tradition of Neoclassical economics, where macroeconomic outcomes such as the current account balance are largely determined by household preferences. If, for example, the corporate sector raises or lowers its retained profits, rational shareholders will see through the "corporate veil" and will always be able to offset any unwarranted changes in corporate saving by opposite changes in personal saving so that the aggregate amount of saving remains at the discretion of households. Similar arguments apply to the government sector, based on the notion of "Ricardian equivalence". If, for example, the government increases its deficit (lowers its saving), rational households may anticipate future tax hikes and adjust their current saving upwards.

Despite their formal appeal, the notions of a fully transparent corporate veil and of Ricardian equivalence are difficult to reconcile with empirical evidence which suggests that the financing positions of the non-household sectors do affect the current account (IMF, 2006; André et al., 2007; Behringer and van Treeck, 2015). As an illustration, Figure 3 shows that changes in the current account correlate positively with changes in the corporate balance, but there is no negative correlation between changes in the corporate balance and changes in the household balance in a sample of 17 high-income countries for the period 1995-2007. While the picture is less clear for the government balance, multivariate estimations of current account determinants consistently show that a higher (lower) government deficit contributes to a lower (higher) current account balance (e.g. Lee et al., 2008; Phillips et al., 2013). In light of the empirical evidence we can thus confidently conclude that sectoral balances do matter for macroeconomic outcomes.

As can be seen in Figure 2, Germany's shift from a small current account deficit in the 1990s to a persistent and unprecedentedly large current account surplus since the early 2000s was in large part due to the shift of the corporate sector from a net borrowing position to a net lending position. In addition to this, the government turned from a persistent deficit position to a balanced budget. The financial balance of the household sector remained roughly stable over time. In the United States, by contrast, the bulk of the decrease of the current account from the 1980s through the outbreak of the financial crisis in 2008 was reflected in a large decrease of the private household

financial balance. Corporate and government net lending, by contrast, showed no pronounced secular changes (despite some cyclical variation).

The next question is how are these changes in the sectoral balances related to shifts in the distribution of income both between and within sectors? While Neoclassical rational expectations model leave little room for income distribution to affect aggregate demand, the Neo-Kaleckian model as outlined above is clearly non-Neoclassical in the sense that the distribution of income between the corporate and the household sector does have saving and aggregate demand effects, since the economy can be either wage-led or profit-led. The relative income hypothesis with upward-looking status comparisons also deviates from the standard Neoclassical assumption of exogenous individual preferences, as it assumes that the satisfaction that households derive from certain consumption goods depends on the consumption of such goods by other households above them in the income distribution ladder. It thus predicts a negative effect of a rise in income inequality on household net lending. This effect is expected to be especially large when households in the middle and upper middle part of the income distribution lower their saving in response to a rise in the share of total income going to the very top. Other non-Neoclassical theories of consumption, such as traditional Keynesian theory, predict a positive link between income inequality and household net lending, based on relatively stable saving propensities across income quantiles. Previous quantitative research, based on panel analyses for high-income countries, suggests that a fall in the wage share has tended to raise the corporate balance and the current account (which is consistent with wage-led growth in the Neo-Kaleckian sense), whereas a rise in top household income shares has tended to lower the private household balance and the current account (which is consistent with the relative income hypothesis) during the period prior to the global financial crisis (Kumhof et al., 2012; Behringer and van Treeck, 2017; Behringer and van Treeck, 2018).

Finally, we ask how the observed changes in income distribution and their macroeconomic effects, through their impact on sectoral balances, can be explained from a political economy perspective, taking into account the institutional environment in specific countries. In so doing, we borrow extensively from the VoC literature and argue that, despite a common trend towards a more inegalitarian society, important institutional differences that have been associated with CMEs and LMEs in the literature largely have remained in place and shaped both income distribution and growth models. Results from multivariate panel analysis suggest that countries with different degrees of wage coordination, despite confronting similar paths of technological change and globalisation as well as financial and labour market liberalisation, experienced rather different patterns of income distribution, with top-end personal income inequality increasing more strongly in countries with less coordinated labor markets and wage shares decreasing more strongly in countries with more coordinated labor markets (Behringer and van Treeck, 2017). Figure 4 gives a bivariate

illustration of the relationship between wage centralisation and income distribution. In the next Section, we attempt to dig deeper into the political economy underpinnings that may contribute to explaining why Germany and the United States have experienced such different patterns of income distribution and how these are related to the two countries' divergent growth models.

4 Debt-led versus export-led growth: the cases of Germany and the United States

4.1 The corporate sector

An important building block of the analysis by Baccaro and Pontusson (2016) of Germany's export-led growth model is the based on the view that German exports have become increasingly price-sensitive and that the German corporate sector has managed to improve its international export competitiveness by reducing wage costs since the early 2000s. The empirical evidence on the price elasticity of German exports being highly contested (e.g. Storm and Naastepad, 2015), we do not need to take a stance on the sources of Germany's recent export successes. Rather, in terms of the financial balances perspective, our main question of interest is why were the receipts from higher exports not channeled back into domestic demand but retained by corporations?

Figure 5 shows the evolution of corporate saving and investment in Germany and the United States since 1980. A striking observation from Figure 5 is the strong rise in corporate saving, as a percentage of GDP, in Germany, leading to persistently positive corporate net lending since the early 2000s. By contrast, in the United States corporate saving has remained roughly constant in percent of GDP, and corporate net lending has turned positive only in response to the financial crisis of 2008.

In our view, the different institutional settings and different strategic objectives in the corporate sector are paramount to understanding the diverging patterns of income distribution and the different growth models of Germany and the United States. Although Streeck (2009, chapter 6) emphasizes the growing shareholder value orientation and the increasingly competitive and fluid market for corporate managers, it can be seen from Figure 6 that stock market capitalization as a share of GDP in Germany is still quite small compared to the United States. More importantly, even though looking at the largest listed companies may convey the impression that "[...] (a)s in other countries, German executives' salaries have gone through the roof in recent years" (Streeck, 2009, p.83), top household income shares have only increased moderately since 1980, especially in comparison with such countries as the United States or the United Kingdom (see Figure 1).

An important peculiarity of the German corporate sector is the large share of family-controlled

businesses, the so-called Mittelstand.[3] Notice, to begin with, the macroeconomic importance of the Mittelstand. The Mittelstand comprises practically all small and medium-sized enterprises (SME), but also many large companies. SMEs in Germany account for 35 percent of all sales and for 59 percent of all employees covered by social security. According to the German Institut für Mittelstandsforschung (IfM), roughly 65 percent of all German firms belong to the Mittelstand, which is defined by the IfM as comprising all those firms where at most two natural persons hold more than 50 percent of a firm's equity while also being actively involved in the management of the firm. Beyond this formal definition, as many as 77 percent of all firms are perceived by their executives as being part of the Mittelstand. Even among large companies with annual sales exceeding 50 million euros, 41 and 91 percent of all firms belong to, respectively, the definitional and the self-proclaimed Mittelstand (see Welter et al., 2015).

An important characteristic of the Mittelstand is that the principal-agent problem between the owners and the managers of the company is far less pronounced than in the case of publicly listed joint-stock companies. Owner-managers can be expected to have much more long-term objectives than hired managers with a much shorter average job tenure. Owner-managers therefore have far less incentives to extract as much cash as possible in as short a time period as possible from their firms than hired managers. This is especially true when the ownership and management of a firm is passed on from one family generation to the next. In Germany business wealth enjoys a preferential tax treatment compared to other forms of bequests. Moreover, retained profits are taxed less than distributed profits. According to Ruscher and Wolff (2012, p.8), the tax law in Germany therefore provided "an incentive to use corporations as piggybank". According to Pahnke et al. (2015), the stricter equity requirements of Basel I and II may have led to an even stronger desire of Mittelstand companies to make themselves independent from the banks. Hence, these new regulations may have further increased firms' saving motive. Pahnke et al. (2015, pp.4-7) shows that equity ratios have strongly increases in SMEs, but not in large companies, and that the retained earnings of SMEs have also strongly increased throughout the 2000s, to exceed 80 billion euros, or almost 3 percent of GDP, just before the start of the financial crisis in 2008.

It is important to realize that the corporate sector's policy of profit retention is directly linked to the relative constancy of top household income shares (Figure 1). Clearly, if German corporations had behaved more like their counterparts in the United States and paid higher top management salaries, corporate retained earnings would have been lower but top household income shares higher. On the other hand, the rise in corporate saving is also linked to the fall of the economy-wide wage share in Germany (Figure 1). Perhaps paradoxically at first sight, one explanation of

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[3]Streeck (2009, p.89) notes that "[...] although there is for reasons of space no specific chapter on Mittelstand, it would have produced essentially the same story of progressive disorganization that we have told of our five sectors."

the relative constancy of the wage share in the United States is the explosion of top management wages which compensated the much more sluggish wage trends in the bottom 90 percent or so of the wage distribution.

We can also discuss the above mentioned developments in the context of the "dualization hypothesis", which says that the German economy is increasingly characterized by a dual labor market in which self-confident and well protected core workers coexist with precarious low-pay workers. In this regards, we agree with Streeck (2009, p.85) that "rising competitive pressures [...] have not made German firms seek relief in radical individualization of the employment relationship. [...] Instead the dominant strategy was to build a coalition between shareholders and core employees on in which the latter share the concern of management with raising the market value of the firm to fight off potential takeovers" (see also Palier and Thelen, 2010). As can be seen in Figure 1, the brunt of the strong fall in the German wage share has been borne by workers in the bottom half of the wage distribution, while the earnings distribution has remained relatively stable in the upper part of the distribution. However, the main beneficiaries of recent changes in the distribution of income in Germany clearly have been corporate owners (rather than salaried top managers as in the United States).

In a nutshell, we argue that the very different financial policies and strategic orientation of the corporate sector in Germany and the United States help explain why the common trend towards a more inegalitarian distribution of income has taken rather different forms and why these were linked to different macroeconomic outcomes in the two countries. In Germany, the strong fall in the wage share and the concomitant rise in corporate retained earnings largely prevented an increase in top household income shares but also held back domestic demand by pushing the corporate sector into a persistent net lending positions. In the United States, the corporate sector paid much higher incomes to top earners, implying lower corporate saving but also a stronger rise in top-end income inequality.

4.2 The household sector

Figure 7 shows the relative constancy of the private household financial balance in Germany since the 1980s. The personal debt-to-GDP ratio increased during the 1990s, only to fall back to its 1990 level of slightly more than 50 percent today. In stark contrast to this, in the United States private household net lending fell from more than 6 percent of GDP in the early 1980s to around -2 percent just before the financial crisis, while the personal debt-to-GDP ratio skyrocketed from less than 50 percent of GDP in the early 1980s to almost 100 percent just before the crisis.

These observations are intriguing, not least from a traditional Keynesian point of view. As noted above, some authors argue that "rising inequality has, other things equal, a negative effect on

consumption expenditures and thus on aggregate demand" (Stockhammer, 2015, p.943) and that "shifts within the distribution of wage income [...] would have similar effects to a redistribution from profits to wages" (Baccaro and Howell, 2017, p.6). Hence, an interesting question to ask is why did private consumption take such different paths in countries like Germany and the United States, despite the increase in inequality which the above mentioned authors see as the main reason for the emergence of debt-led and export-led growth models?[4] Stockhammer (2015, p.944) only notes in passing that "[...] (f)inancial institutions as well as industrial relations and industrial policy play a role", and points to "a strong aspect of historical continuity on the side of the export-led models". Baccaro and Howell (2017, p.211) indicate only that debt-led growth may result from the interaction of rising inequality and financialization and that "[...] (a) debt-led economy needs to attract international financial capital to cover its endemic current account deficit as a result of excessive consumption".

The relative income hypothesis with upward-looking status comparisons offers a direct theoretical explanation of the divergent paths of household consumption in Germany and the United States. In particular, it can explain why the decrease of the aggregate U.S. household saving rate was driven largely by the decrease in the saving rates below the top 1 percent of the wealth distribution (Saez and Zucman, 2014) and why the rise in personal debt was concentrated in the bottom 95 percent of the distribution (Kumhof et al., 2015). Interestingly, saving and debt-to-income ratios remained roughly constant at the top of the distribution.[5] The basic intuition here is that the middle and upper middle class in the United States have reduced their saving in order to try and keep up with the spending patterns of households at the top. This, in turn, may have also increased the pressure on the lower middle and lower classes to increase spending relative to their incomes. Ultimately, therefore, the rising standard of living at the top of the distribution has affected the consumption norms of the entire income distribution ("expenditure cascades", see Frank et al., 2014). There is considerable evidence that middle and upper-middle class households in the United States have traded off their retirement savings for the purchasing of positional goods such as education, housing, or health care, which are allocated through largely unregulated markets especially in the United States (e.g. van Treeck, 2014; Frank et al., 2014; Bertrand and Morse, 2016). Meanwhile, the rise in the personal debt-to-income ratio was facilitated by the largely

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[4]See, for example, Stockhammer (2015, p.944):"I interpret these models as a reaction to the same underlying problem: stagnating domestic demand due to rising inequality."

[5]Stockhammer and Wildauer (2016) conclude from a macro panel analysis for 18 OECD countries that aggregate demand has been unrelated to personal income inequality during the period 1980-2013. They suggest instead that aggregate demand has been driven by rising debt and property prices, while the fall in the wage share has weakened aggregate demand on average for the countries considered in their sample. Note, however, that this finding cannot simply be applied to the individual case of the United States, where, as noted above, the fall in saving and the rise in debt were very unequally distributed across the income distribution.

deregulated credit markets in the United States, i.a., a high degree of "financialization".[6]

It is unlikely, however, that differing degrees of financialization are the main explanation of why household net lending and household debt developed so differently in the United States and Germany. In other words, household demand for goods and services in Germany certainly was not held back by supply-side constraints (in the credit market), but by households demand for consumption and credit. Note that the saving rate of the bottom three income quartiles actually decreased (slightly) since the early 2000s, when these income groups saw their relative income decrease relative to the top quartile of the distribution (Behringer et al., 2014, p.3, Figure 1b), in line with what the relative income hypothesis would predict. The main difference compared to the United States was that households just below the top of the distribution (in fact, those who are least likely to face credit constraints) did not lower their saving rates. In our view, potential reasons for this are the following: firstly, income inequality did not change as much at the very top of the distribution so that middle and upper middle class households felt less pressure to trade-off saving for positional goods in order top keep up with the rich (Figure 1). As argued in Section 4.1, the subdued rise in top-end income inequality (and hence of consumption trickle-down effects) was due to the fact that a large part of rising profits was retained by corporations. Secondly, the public health and social system is more developed in Germany (see Figure 8), reducing the need for households with declining relative income to finance health and other expenditures through lower saving and higher debt. Thirdly, German households have a stronger precautionary saving motive due in part to more industry-specific skills, reflected in longer job tenure (see Figure 9) and higher long-term unemployment (see Figure 10), and to a more unequal division of paid labor within households (see Figure 11), which, in addition to specific skills, reduces households' ability to self-ensure against unforeseen spells of unemployment (see also Carlin and Soskice, 2009).

The inequality-consumption nexus in the household sector can also be interpreted in the context of recent debates about the "dualization" of the German labor market. Clearly, the rise in the Gini coefficient and the D9/D1 earnings ratio in Germany, was in large part due to higher earnings inequality in the bottom half of the distribution and to a much lesser extent to higher top-end income inequality (see Figure 1). Against this background, part of the VoC literature argues that the manufacturing core of Germany's industrial relations remains fundamentally coordinated and core workers protected from the liberalization and deregulation in the growing low pay sector (e.g. Palier and Thelen, 2010; Hassel, 2014). Others argue instead that liberalizing reforms put pressure

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[6]It is, however, quite likely that the trickle-down consumption hypothesis has ceased to be an accurate description of the saving behavior of households in the United States since the outbreak of the financial crisis in 2008. The rise in household debt has turned out to be unsustainable, and it seems unlikely that private consumption will once again become the main driver of aggregate demand growth without a stronger growth of middle-class incomes (Kumhof et al., 2015). As noted by Baccaro and Pontusson (2016, p.176), growth regimes are "numerous and unstable" and contingent on specific historical circumstances.

on core workers to agree to concessions (Eichhorst and Marx, 2010) and that unions increasingly believe that agency work is a way to replace stable employment with precarious employment (Benassi and Dorigatti, 2015); see Baccaro and Howell (2017, p.120) for a discussion. In terms of the inequality-consumption nexus considered here, both views contain important truths: on the one hand, the German middle class still fares relatively well economically, especially relative to top-income households. There was therefore no need for the middle class to reduce their saving or go deeper into debt in order to be able to afford basic middle class wants such as decent health care, education for their children, or housing. On the other hand, the implementation of reforms to make the labor market more flexible and to establish a growing low pay sector since the 2000s may have interacted with the behavior of workers with specific skills to increase precautionary savings and thus contributed to depressed domestic demand (see also by Carlin and Soskice, 2009).

4.3   The government sector

While the main focus of the present article is on the corporate and household sectors, the government can influence national growth models in several important ways. To begin with, the government regulates, taxes and pays transfers and subsidies to the corporate and household sectors.

For example, that "expenditure cascades" have been less pronounced in Germany than in the United States certainly has a lot to do with the fact that credit markets are more strictly regulated and that the important (positional) goods such as education, health care are provided to the household sector through government funding in Germany. As shown in Figure 8, neoliberal transformation notwithstanding, public spending on health and social benefits in kind has been relatively constant in Germany over time and orders of magnitude higher than in the United States. Similarly, the German education system is almost fully government funded from the primary school to the postgraduate level, and thus stands in stark contrast to the largely private education system in the United States. From the perspective of the relative income hypothesis, the German system of public goods clearly reduces the need for middle class families aspiring to a good level of education for their children and decent health care, for example, to bite into their savings and go into debt, as their relative incomes decrease.

Similarly, in Germany there is a long tradition of preferential tax treatments for retained profits and inherited business wealth. Unlike in the United States, the (re-)introduction of a wealth tax or a more substantive inheritance tax are political taboos in Germany, partly because this would meet the resistance of the Mittelstand. Germany's tax policy thus favors the "retain-and-save" strategy of the corporate sector in a context of a rising profit share.

As highlighted in Section 3, the government may also affect macroeconomic outcomes in a

more direct way, i.e., through the government financial balance (see also Figure 2). Iversen and Soskice (2012) cite a number of studies suggesting that higher wage centralization is associated with more conservative monetary and fiscal policy. The basic argument is that with high union centralization, each union is large enough to know that a high wage settlement will push up inflation. This in turn provides incentives for monetary and fiscal policy to be conservative and to the trade unions to implement nominal wage restraint, with the result of lower price inflation and higher export price competitiveness. In line with this argument, Arabzadeh (2016) presents empirical evidence that higher wage centralization is typically associated with a lower budget deficit, and hence with a lower current account. A less functionalist, but more political explanation of Germany's fiscal conservatism would be that, as the German corporate sector has become increasingly export-oriented since the early 2000s, it has lobbied against more expansionary fiscal policies which may have increased the tightness of the labor market and pushed up wages.

Figure 12 shows the cyclically adjusted government balance and the output gap for Germany and the United States. In the presence of a counter-cyclical discretionary fiscal policy the structural government balance should be expected to move in the same direction as the output gap. While this has been largely the case in the United States, Germany has conducted either less strongly counter-cyclical or even pro-cyclical discretionary fiscal policies especially since the early 2000s. These have further contributed to the weak domestic demand and to the increasing export dependence of the German growth model.

5 Concluding discussion

In this paper, we have reconsidered the export-led and debt-led growth models of, respectively, Germany and the United States from a financial balances perspective. The paper thus seeks to contribute to recent attempts at "bringing macroeconomics back into Comparative Political Economy (CPE)" (Baccaro and Pontusson, 2016, p.181). While we do agree with proponents of the "growth model perspective" (Baccaro and Pontusson, 2016) that the VoC approach tends to neglect the importance of income distribution as a determinant of broad macroeconomic trends, we have tried to show in this paper that the traditional neo-Kaleckian model is not well suited to clearly distinguish between the potential macroeconomic implications of the functional distribution of income (wages versus profits) on the one hand, and the personal distribution of income (top-end income inequality in particular) on the other hand. In particular, while we agree with e.g. Stockhammer (2015) and Baccaro and Benassi (2017) that the Neo-Kaleckian model provides a useful analytical framework for explaining the link between the strong fall in the wage share and the weak domestic demand and persistent current account surplus of Germany, the Neo-Kaleckian

model has very little to say about the macroeconomic effects of income distribution in the United States because it has no role for the personal distribution of income.

We argued above that the weak domestic demand in Germany was not so much the result of the increase in income inequality in the household sector, but rather of the profit retention policy applied by the corporate sector which constrained household income and hence consumption demand. More generally, we argue that corporate sector behavior is crucial for understanding trends in income distribution and aggregate demand in different countries. In our view, the institutional differences between, put simply, the family-controlled German Mittelstand firm and the shareholder value oriented U.S. stock company, go a long way in explaining why top household income shares have exploded in the United States but not in Germany since the 1980s, whereas the wage share has fallen substantially in Germany but not in the United States, in spite of both countries confronting similar paths of technological change and globalisation as well as financial and labor market liberalization. By affecting the income and hence the net lending positions of the household and corporate sector, the financial decisions of the corporate sector are of utmost importance to the analysis of aggregate demand regimes.

An important weakness of the financial balances approach is that it does not have much to say about the determinants of growth *per se*. Because the financial balances of the household, corporate, government and foreign sector always need to sum to zero by definition, any level of sectoral net lending or borrowing in principle can be consistent with any growth rate. In this article, therefore, we have not taken a stance, for example, on the debate over whether nominal wage restraint has boosted German exports, as argued by Baccaro and Benassi (2017), or whether wage suppression has actually been damaging to Germany's aggregate performance, as suggested by Storm and Naastepad (2015). Rather, we have looked at how Germany's positive net exports (which are associated with a current account surplus and net capital exports) were reflected in the financing positions of the household, corporate, and government sector.

An important avenue for future research has been highlighted by Baccaro and Pontusson (2016, p.200): politics need to be introduced into the growth model perspective in a more systematic fashion. The basic intuition is that growth models are supported by clearly identifiable coalitions of social forces ("social blocs"), that defend particular growth models in the name of the "national interest". We certainly agree with Baccaro and Pontusson (2016) that in the case of Germany, export-oriented manufacturing firms and what is left of the worker aristocracy of skilled workers constitute a cohesive and dominant social bloc in this sense. This view is also consistent with the income distribution data reported in the present paper, i.e., the relative constancy of top household income share and the D9/D5 earnings ratio, and the strong fall in the wage share and rise in the D5/D1 earnings ratio. More generally, the comparison of income distribution trends in

Germany and the United States shows how much (corporate) elites can shape social and macroe-conomic outcomes. Put bluntly, in the United States top corporate management elites have used their increased bargaining power to maximize their own individual income and, as consumers, put pressure on the rest of society by raising consumption norms. In Germany, the influential group of owner-managers, faced with a similar increase in bargaining power, have renounced to an os-tentatious individual lifestyle but accumulated financial wealth for their family-owned businesses and thereby restrained the development of domestic demand. An important question for future research is how are cross-country institutional differences, that have been emphasized by the VoC literature, in such areas as the public provision of positional goods and credit market regulations, in systems of skill formation, or the shareholder value orientation of corporations, related to the interests of dominant social blocs in different countries? As shown in the present article, such institutional factors, which persist in spite of similar neoliberal trajectories in most countries, are crucial to understand both country-specific patterns of income distribution and macroeconomic growth models.

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A Description of data

A.1 Variable definitions and data sources

Variable	Definition	Source
Top income share	Top income share of fiscal income	WID
Adjusted wage share	Adjusted wage share of the total economy in % of GDP at total factor cost	AMECO
Gini coefficient	Gini coefficient of equivalized household market income	SWIID
Decile ratios	Decile ratios of gross earnings (P50P10, P90P10, P90P50)	OECD
Current account balance	Current account balance in % of GDP	AMECO
Household financial balance	Household financial balance in % of GDP	AMECO, OECD
Corporate financial balance	Corporate financial balance in % of GDP	AMECO, OECD
Government financial balance	Government financial balance in % of GDP	AMECO, OECD
CENT	Summary measure of centralisation of wage bargaining	ICTWSS
Corporate gross saving	Gross saving in % of GDP	AMECO
Corporate gross capital formation	Gross capital formation in % of GDP	AMECO
Stock market capitalization	Stock market capitalization in % of GDP	WDI
Household debt	Household debt in % of GDP	BIS
Job tenure	Incidence of job tenure (10 years and over)	OECD
Long-term unemployment rate	Long-term unemployment rate (12 months or more)	OECD
Hours worked	Average usual weekly hours worked in % of total hours worked	OECD
Health spending	Health spending in % of GDP	OECD
Public health spending	Public health spending in % of total health spending	OECD
Social transfers	Social transfers in kind in % of GDP	AMECO
Government structural balance	Government structural balance in % of potential GDP	WEO
Output gap	Output gap in % of potential GDP	WEO

Note: AMECO=AMECO database of the European Commission; BIS= Bank for International Settlements; ICTWSS=Database on Institutional Characteristics of Trade Unions, Wage Setting, States Intervention and Social Pacts; OECD=OECD Statistics; SWIID=Standardized World Income Inequality Database; WDI=World Development Indicators (World Bank); WEO=World Economic Outlook Database (IMF); WID=World Inequality Database

B The Neo-Kaleckian model and the relative income hypothesis

B.1 The Neo-Kaleckian model

The Neo-Kaleckian model focuses on the relationship between the functional distribution of income and aggregate demand. The following summary of the Neo-Kaleckian model is based on Stockhammer et al. (2011): The components of aggregate demand (i.e. consumption C, investment I, net exports NX, and government expenditure G) can be written as follows:

$$Y = C(Y, \pi) + I(Y, \pi, z_I) + NX(Y, \pi, z_{NX}) + G(Y, z_G) \tag{4}$$

where Y is the gross domestic product (GDP), π is the profit share and z are other exogenous variables. The profit share is defined as the share of capital income in GDP, and the wage share, h, is defined as $h = 1 - \pi$. It is typically assumed that there are no supply constraints on GDP.

The total effect of a change in the profit share on GDP is then given by:

$$\frac{dY^*}{d\pi} = \frac{(\frac{\delta C}{\delta \pi} + \frac{\delta I}{\delta \pi} + \frac{\delta NX}{\delta \pi})}{1 - (\frac{\delta C}{\delta Y} + \frac{\delta I}{\delta Y} + \frac{\delta NX}{\delta Y} + \frac{\delta G}{\delta Y})} \tag{5}$$

where the denominator is the standard multiplier and we assume that it is positive.

The sign of the effect of the profit share on GDP thus depends on the sign of the numerator (i.e. the sum of the partial effects of a change in the profit share on the components). The partial effect on private consumption is expected to be negative. The partial effects on investment and net exports are expected to be positive. The demand regime is called "wage-led" when an increase (decrease) in the wage share (profit share) leads to an increase in the sum of the components of aggregate demand, *i.e.*, $\frac{dY^*}{d\pi} < 0$. The demand regime is called "profit-led" when an increase (decrease) in the profit share (wage share) leads to an increase in the sum of the components of aggregate demand, *i.e.*, $\frac{dY^*}{d\pi} > 0$. Because net exports also depend on aggregate demand, the total effect of a change in the wage share on net exports is theoretically undetermined in either a profit-led or a wage-led economy.

B.2 The expenditure cascades model

The expenditure cascades model is a variant of the relative income hypothesis. It focuses on the relationship between personal income inequality and private consumption demand, based on the notion of upward-looking status comparisons. The following summary of the expenditure cascades model is based on Frank et al. (2014): Consumption demand of household i, C_i, depends positively on its own income, Y_i, (with $0 \leq k \leq 1$) and positively on the consumption of households with a marginally higher income, C_{i+1} (with $0 \leq \alpha \leq 1$):

$$C_N = kY_N \qquad \text{for} \qquad i = N \tag{6}$$

$$C_i = k(1 - \alpha)Y_i + \alpha C_{i+1} \qquad \text{for} \qquad i = 1, ..., N - 1 \tag{7}$$

A rise in income inequality exerts downward pressure on the saving rates of all households whose income falls relative to households above them in the income distribution ladders. Moreover, for given income inequality, the strength of expenditure cascades, given by α, depends on country-specific norms and institutions. When firms retain their profits rather than passing them on to top income households, expenditure cascades may be weaker, *i.e.*, corporate governance institutions matter. In an open economy context, (the absence of) expenditure cascades will be associated with a current account deficit (surplus).
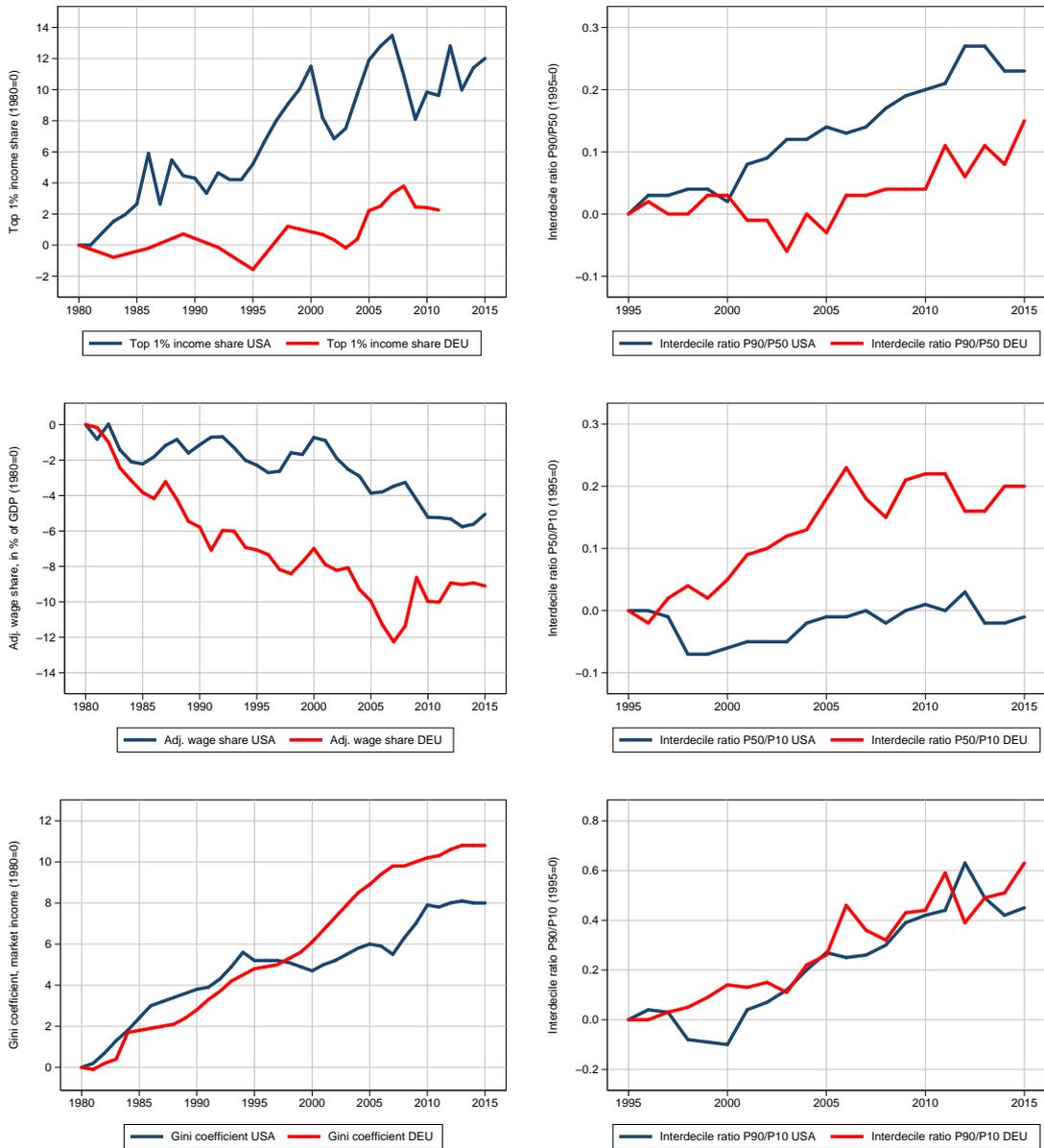
Note: The left column shows the change in, respectively, the top 1% household income share, the adjusted wage share, and the Gini coefficient of market income for Germany and the United States, 1980-2015. The right column shows the change in three earnings-dispersion measures - ratio of 5th-to-1st, 9th-to-1st, and 9th-to-5th - for Germany and the United States, 1995-2015. The ninth, fifth (or median) and first deciles are upper-earnings decile limits of gross earnings of full-time dependent employees.

Figure 1: Different measures of income distribution
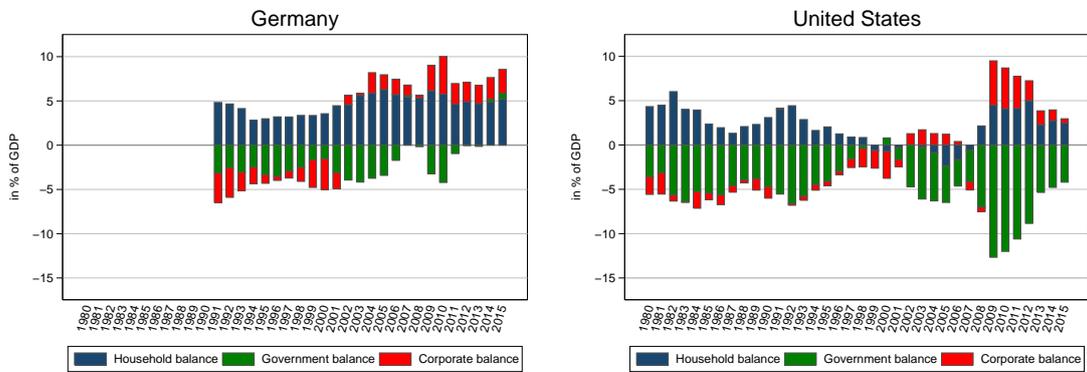
Note: The figure shows financial balances for the household, corporate, and government sector in % of GDP for Germany and the United States, 1980/91-2015.

Figure 2: Sectoral balances: Germany, United States
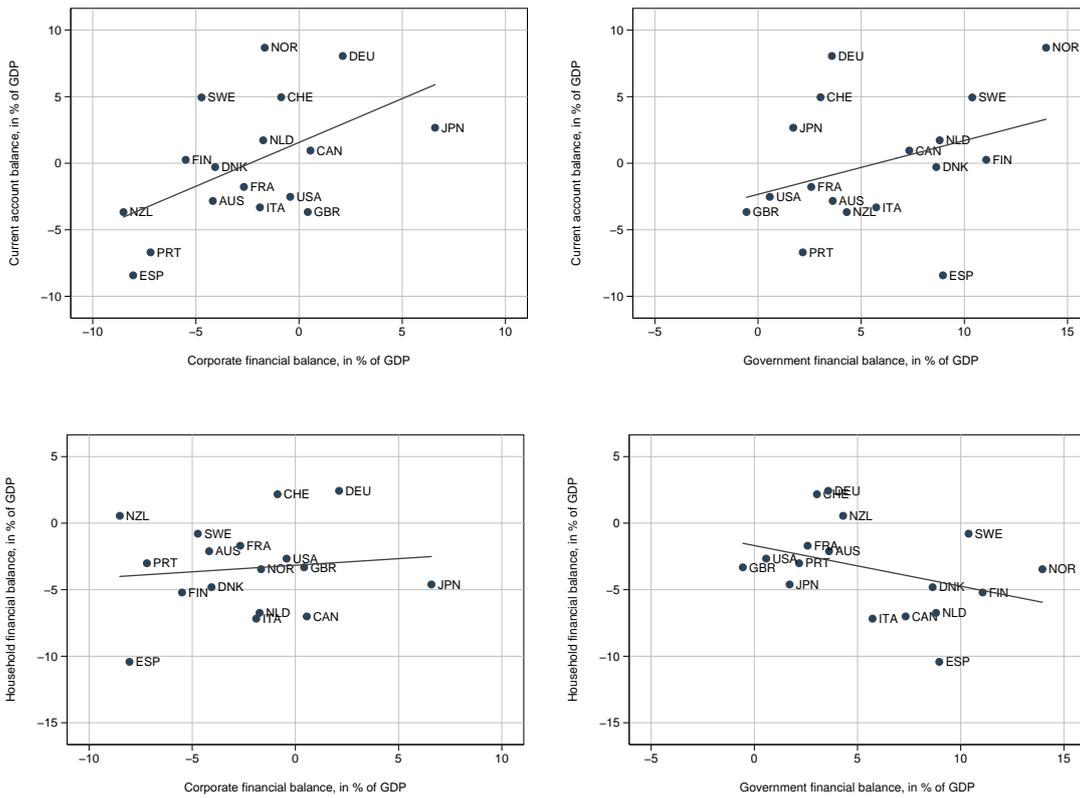
Note: The figures on the left-hand (right-hand) side show the change in the corporate (government) financial balance in % of GDP (horizontal axis) against respectively the change in the current account balance in % of GDP and the private household financial balance in % of GDP (vertical axis), 1995-2007. For New Zealand changes are shown for the period 1998-2007. For the United Kingdom changes are shown for the period 1997-2007. For all other countries, changes are calculated for the period 1995-2007.

Figure 3: Sectoral balances
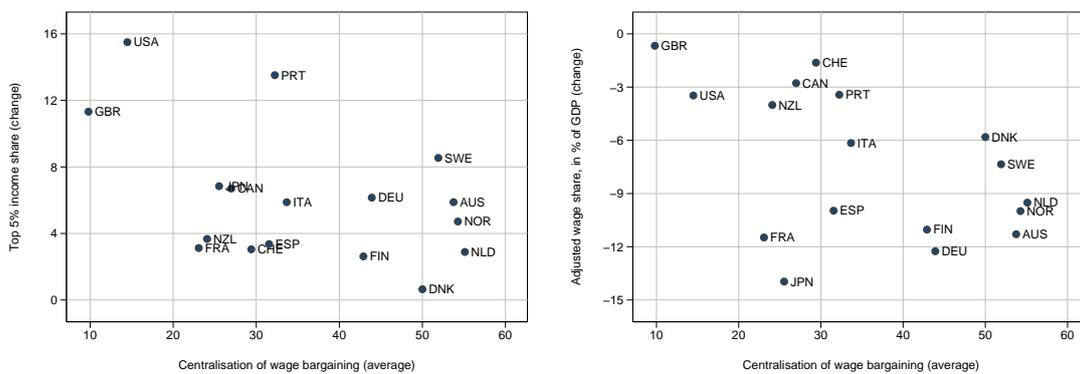
Note: The figure shows the average of the centralisation of wage bargaining (horizontal axis) against the change in, respectively, the top 5% household income share, the adjusted wage share, and the Gini coefficient of market income (vertical axis), 1980-2007. For New Zealand changes are shown for the period 1986-2007. For Switzerland changes are shown for the period 1991-2007. For the Netherlands, Spain, and the United Kingdom changes are shown for the period 1981-2007. For all other countries, changes are calculated for the period 1980-2007.

Figure 4: Income distribution and centralisation of wage bargaining
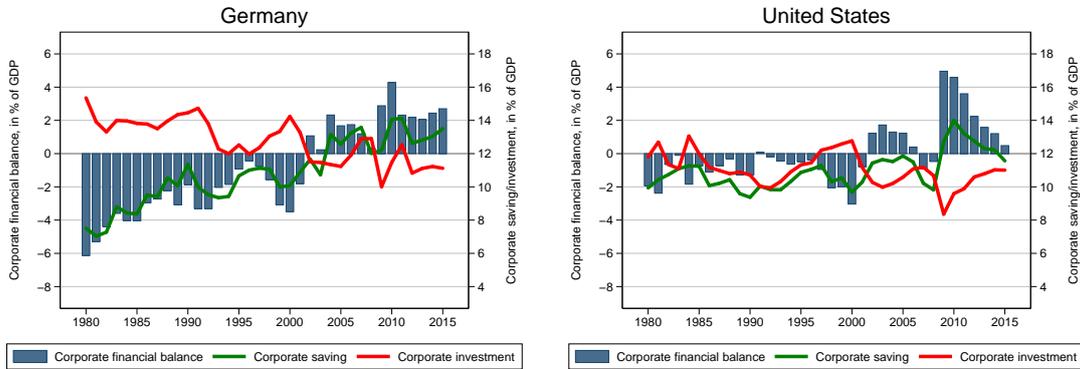
Note: The figure shows the corporate financial balance in % of GDP, gross saving in % of GDP, and gross capital formation in % of GDP for Germany and the United States, 1980-2015.

Figure 5: Corporate balance
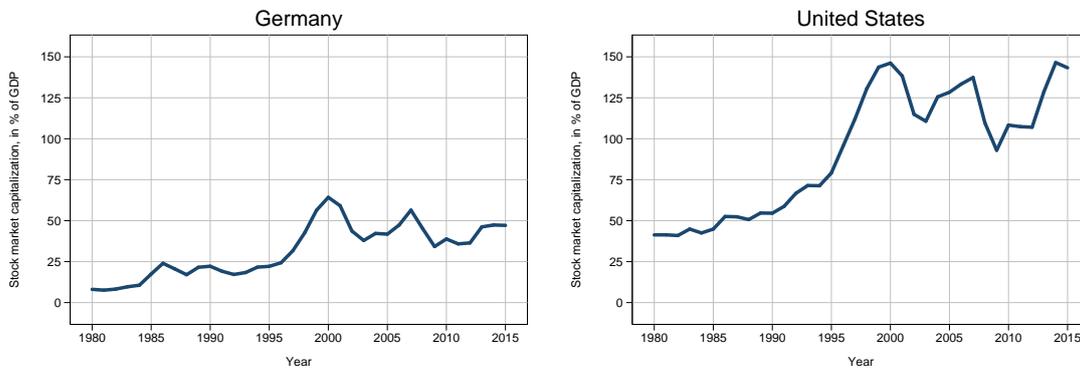
Note: The figure shows the stock market capitalization in % of GDP for Germany and the United States, 1980-2015. Stock market capitalization is the total value of all listed shares in a stock market.

Figure 6: Stock market capitalization
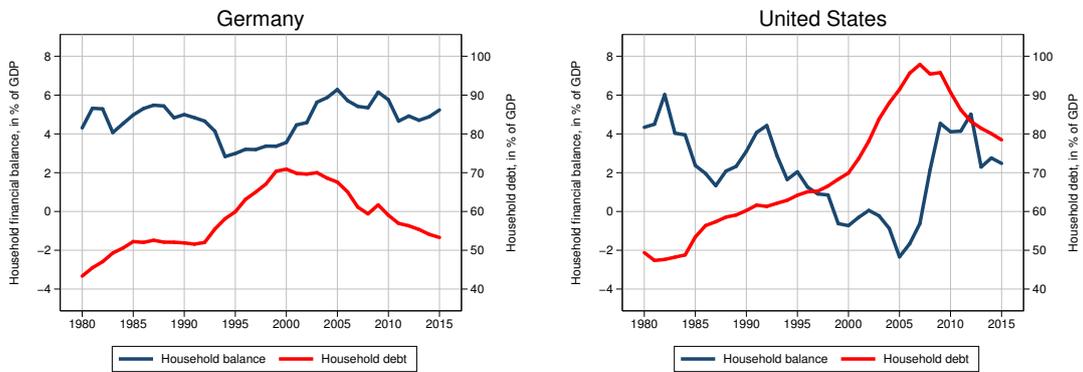
Note: The figure shows the household financial balance in % of GDP and household debt in % of GDP for Germany and the United States, 1980-2015.

Figure 7: Household balance and debt
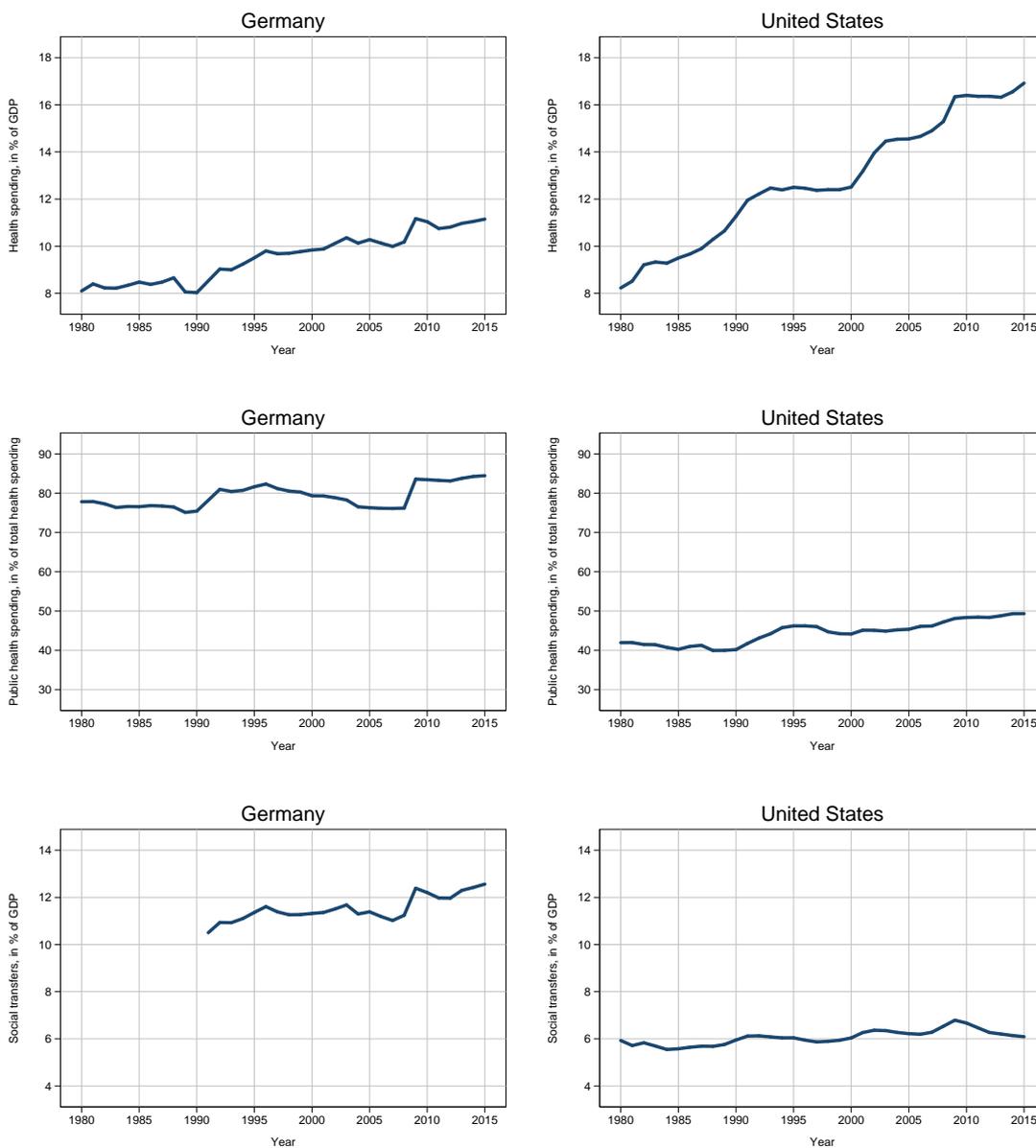
Note: The first row shows health spending in % of GDP for Germany and the United States, 1980-2015. The second row shows public health spending in % of total spending on health for Germany and the United States, 1980-2015. The bottom row shows social transfers in kind in % of GDP for Germany and the United States, 1980/91-2015.

Figure 8: Health and social spending
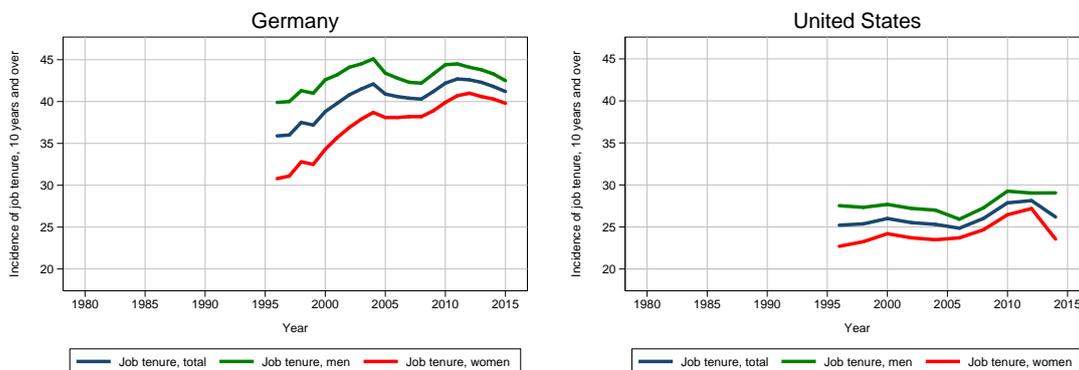
Note: The figure shows job tenure of 10 years and more for dependent employees (all persons, men, and women) in % of total employment for Germany and the United States, 1996-2015. Job tenure is measured by the length of time workers have been in their current or main job or with their current employer.

Figure 9: Job tenure
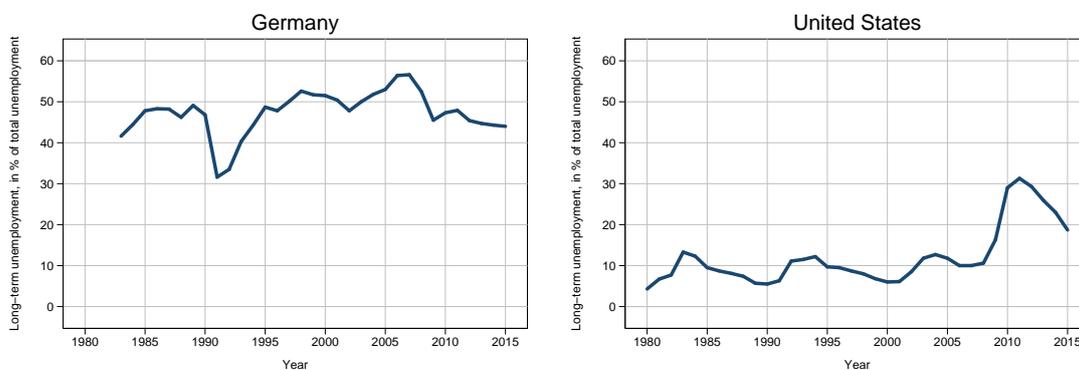
Note: The figure shows the long-term unemployment rate for Germany and the United States, 1980-2015. Long-term unemployment refers to people who have been unemployed for 12 months or more. The long-term unemployment rate shows the proportion of these long-term unemployed among all unemployed.

Figure 10: Long-term unemployment rate
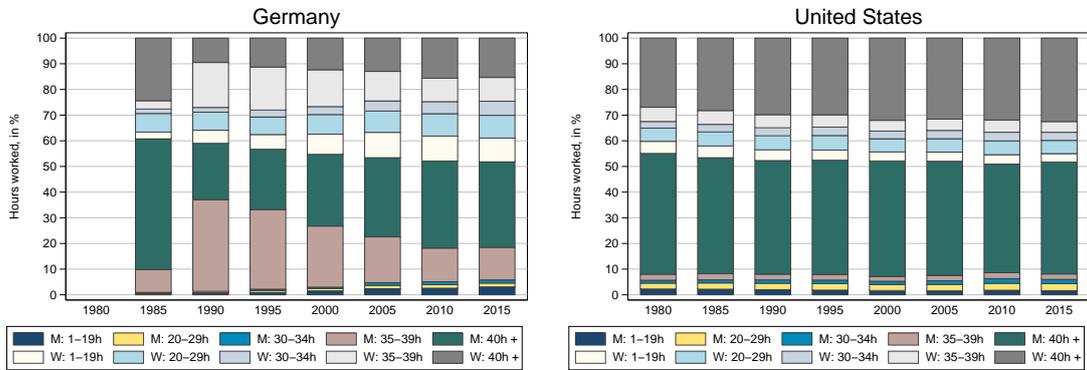
Note: The figure shows average usual weekly hours worked for dependent employees (men and women) in % of total average usual weekly hours worked for Germany and the United States, 1980/1985-2015.

Figure 11: Hours worked
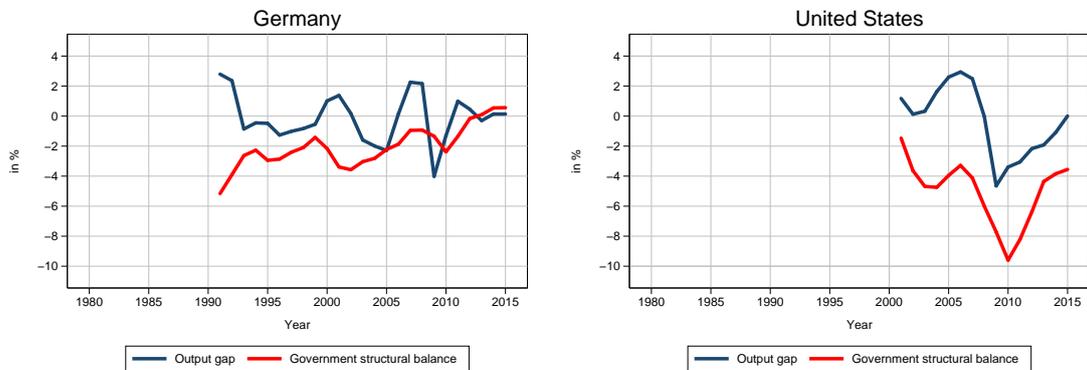
Note: The figure shows the government structural balance in % of potential GDP and the output gap in % of potential GDP for Germany and the United States, 1991/2001-2015.

Figure 12: Structural government balance and output gap